ABSTRACT
Peripheral ossifying fibroma is a localized reactive lesion that may occur on the gingiva. It occurs due to irritants like trauma, microorganisms, plaque, calculus, overhanging restorations and ill-fitted dental appliances. The lesion was found more frequently in maxillary gingival region of young females. The present case was carried out to investigate the histopathological features of peripheral ossifying fibroma. Histologically, cellular fibroblastic connective tissue stroma associated with areas of mineralization and cementum like material and dystrophic calcifications was found.

Keywords: Cementum-like material, Dystrophic calcification, Irritants, Mineralization, Peripheral ossifying fibroma.

INTRODUCTION
Many types of localized reactive lesions may occur on the gingiva, including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma and peripheral ossifying fibroma. These lesions arise due to irritants like trauma, microorganisms, plaque, calculus, overhanging restorations and ill-fitted dental appliances. Peripheral ossifying fibroma is a gingival nodule composed of a cellular fibroblastic connective tissue stroma associated with the formation of randomly dispersed foci of a mineralized product consisting of either bone (woven and lamellar), cementum-like material and dystrophic calcifications. It is a reactive lesion, not neoplastic lesion. This slow-growing lesion arises in gingiva, most commonly from interdental papillae as an elevated nodule of pink to red color, with well defined margins and normal color overlying mucosa. Peripheral ossifying fibroma shows a predilection in maxilla approximately 60% and more often in the anterior region as compare to posterior region. More incidence of peripheral ossifying fibroma among females may be due to hormonal influences and this type of growth seen in the second decade of life. This article presents a case of peripheral ossifying fibroma with a brief review of literature.

CASE REPORT
A 30 years old female patient reported to the Department of Periodontology and Implantology, at Institute of Dental Sciences, Bareilly, with the chief complaint of swelling in upper front tooth region since 1 year. As stated by patient, the growth started as a small painless swelling in upper anterior tooth region. The swelling gradually increases in size with time. She also complains of bleeding from the same affected region while cleaning her teeth. This was her first dental visit. Patient’s medical and family history was noncontributory. Oral hygiene practice of patient reveals that she cleans teeth daily with finger using tooth-paste in horizontal direction once in the morning.

CLINICAL EXAMINATION
On intraoral examination, a solitary, isolated swelling was present in the labial aspect of maxillary anterior tooth region, extending from distal of maxillary left central incisor to the mesial of maxillary right canine. The lesion appeared nodular with an irregular surface with well defined margins. The lesion appears reddish pink in color at some areas while exterior of the swelling was pale pink in color, measuring 15 × 20 mm in size, with sessile base (Fig. 1). The lesion was not fluctuant, nor did it blanch with pressure, but had a rubbery consistency. It was tender to firm pressure, but not to light palpation.

RADIOGRAPHIC EXAMINATION
Maxillary occlusal radiograph was obtained. The radiographic examination showed interdental bone loss and radiopaque specks between maxillary central incisors (Fig. 2).
Provisional Diagnosis

On the basis of patient’s history, clinical and radiographic examination, a provisional diagnosis of peripheral ossifying fibroma was made. The differential diagnosis included irritational fibroma, pyogenic granuloma and peripheral giant cell granuloma.

Treatment

Patient underwent cause-related therapy which included scaling and root planing. Patient was instructed about oral hygiene measures and was recalled after 2 weeks for conservative surgical excision of the growth (Fig. 3). Prior to the surgery, the patient rinsed her mouth with 0.2% chlorhexidine for 1 minute as a preprocedural rinse. Bilateral infraorbital nerve block was given using 2% lignocaine hydrochloride with adrenaline 1 in 80,000. Complete excision of the growth was performed using #15 blade (Fig. 4). After removing the overgrowth, bony prominence was encountered (Fig. 5) which was trimmed using slow speed micromotor using carbide bur under saline irrigation (Fig. 6). Periodontal dressing was placed on the surgical area, postoperative instructions were given and patient was prescribed amoxicillin 500 mg TID for 5 days, diclofenac sodium 50 mg SOS. The excised soft-tissue growth was sent for histopathological investigation.

Follow-up

The patient was recalled for follow-up examination 10 days postoperatively to see the healing and gingival tissues status but she did not report back for postoperative evaluation.

HISTOPATHOLOGY

The given hematoxylin and eosin section, under scanner view, shows single piece of tissue with epithelium overlying fibrocellular connective tissue stroma. Few large areas of calcifications are evident in connective tissue. Under low power view and higher magnification, the epithelium is stratified squamous parakeratinized type. The connective tissue stroma comprises of bundles of collagen fibers with plump to spindle-shaped
fibroblasts. Large hematoxyphilic foci of calcification are evident. The stroma in vicinity of calcifications is more cellular and comprised of predominantly plump-shaped fibroblasts. Moderately increased number of endothelial lined blood vessels with red blood cells is also seen (Fig. 7).

Final Diagnosis

On the basis of histopathological report, final diagnosis was ‘peripheral ossifying fibroma’ which confirmed our provisional diagnosis.

DISCUSSION

Different types of overgrowth lesions tend to occur on the gingiva. These lesions are reactive in nature and occurs in response to any local irritants like trauma, microorganisms, plaque, calculus, restorations and dental appliances, rather than neoplastic in nature. These lesions can be identified on the basis of specified characteristic clinical and histopathological features. These lesion include peripheral giant cell granuloma, pyogenic granuloma, irritational fibroma and peripheral ossifying fibroma.

In 1982, Gardner coined the term peripheral ossifying fibroma. It is a lesion that is reactive in nature and is not the extraosseous counterpart of a central ossifying fibroma (COF) of the maxilla and mandible. Peripheral ossifying fibroma occurs due to reactive fibrous proliferation of periosteal and periodontal ligament origin. It is also called as epulis, peripheral fibroma with calcification, peripheral ossifying fibroma, peripheral ossifying fibroma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis and peripheral cemento-ossifying fibroma.

This slow-growing lesion arises in gingiva, from interdental papillae. It comprise of 1 to 3% of all oral lesions and total 9% of all gingival lesions. It occurs more commonly in maxilla than the mandible, mostly in the intercanine region. The growth mostly occurs in 20 to 40 years of age. This lesion rarely occurs in children and adults. Females are more commonly affected than males. The size of the lesion mostly varies up to 1.5 cm, occasionally it can be more in size.

The lesion appears as an elevated nodule of pink to red color, with well defined margins and normal color overlying mucosa. This lesion is mostly sessile but occasionally can have a pedunculated base. The lesion is firm in consistency, fixed to underlying tissue. The teeth are usually unaffected by the growth of this lesion.

The histopathological features show diffused sheets of predominant fibroblasts, with plump to monomorphic nuclei. There is more hypercellularity near calcified area. The lesion appears as hypercellular mixed zone of fibrous and granular tissue around periphery. If ulcerated, it is covered by fibrinopurulent membrane. There are deposits of bone, and cementum-like calcifications. Initial lesion shows irregular mass of multiple basophilic mineralized materials. Older lesion shows ovoid, basophilic cement-like mass.

The differential diagnosis includes pyogenic granuloma, irritational fibroma and peripheral giant cell granuloma.
Clinically, pyogenic granuloma is soft in consistency and reddish in color unlike peripheral ossifying fibroma, which is firm in consistency and pinkish in color. Histopathologically, hyperplasia of vascular component of gingival tissue occurs in pyogenic granuloma, resulting in cellular lesion composed of endothelial cells and small capillaries. Medullary pattern of endothelial cells intermingling with small vascular spaces and loose fibrous connective tissue is seen in pyogenic granuloma. Inflammatory cells are also seen on ulceration. While in peripheral ossifying fibroma, there is hyperplasia of periodontal membrane, resulting in cellular lesion consist of fibroblast and collagen, along with cementum and bone like calcified deposits. Most ulcerated lesions occur in patients in the second decade. Endothelial proliferation can be profuse in the areas of ulceration, which can be misleading in clinical diagnosis, as the lesion may appear to be a pyogenic granuloma.

Clinically, irritational fibroma is firm and pinkish in color like the peripheral ossifying fibroma, but the size of the lesion of irritational fibroma is mostly less than the size of peripheral ossifying fibroma. In adults, irritational fibroma frequently represents as uninfamed mass, which grows from below the free gingival margin or interdental papilla. While peripheral ossifying fibroma growth always extends in the interdental papillary region. Hyperplasia of suprapерiosteal tissue, resulting in overproduction of dense collagen bundles, along with hyperorthokeratosis epithelium is seen in irritational fibroma. While in peripheral ossifying fibroma, there is hyperplasia of periodontal membrane, resulting in cellular lesion consist of fibroblast and collagen, along with cementum and bone-like calcified deposits.

Clinically, peripheral giant cell granuloma is firm, purplish-red color large lesion up to 2 to 3 cm in size. They are highly vascular with increased tendency of bleeding. They occur in anterior region of oral cavity in young and in posterior oral cavity in adults. They are highly aggressive gingival lesions with increased growth potential. While peripheral ossifying fibroma, is firm in consistency, pinkish in color and smaller in size than the peripheral giant cell granuloma. Peripheral giant cell granuloma penetrates interdentally and erodes the adjacent bone, leading to migration of adjacent teeth. While peripheral ossifying fibroma does not lead to migration of the teeth. In peripheral giant cell granuloma, there is hyperplasia of periosteum resulting in overproduction of vascular component and mononucleated and multinucleated giant cells, with irregular sinusoidal spaces. While in peripheral ossifying fibroma, there is hyperplasia of periodontal membrane, resulting in cellular lesion consist of fibroblast and collagen, along with cementum and bone-like calcified deposits.

The recurrence rate for peripheral ossifying fibroma varies from 7 to 45%.

CONCLUSION
Peripheral ossifying fibroma is a slowly progressing lesion. Many cases will progress for long periods before patients seek treatment because of the lack of symptoms associated with the lesion. A slowly growing pink soft-tissue nodule in the anterior maxilla, in intercanine region, should raise suspicion of a peripheral ossifying fibroma. Discussion of the differential diagnosis should be done tactfully to prevent unnecessary distress to the patient and family. In the current case, the family experienced distress related to the suggestion of squamous cell carcinoma before referral for treatment and definitive diagnosis. Treatment consists of complete surgical excision of growth. Close postoperative follow-up is required because of the recurrence potential of incompletely removed lesions.

REFERENCES